

Title (en)  
METHOD AND APPARATUS FOR MEASURING A PARAMETER OF INTEREST USING IMAGE PLANE DETECTION TECHNIQUES

Title (de)  
VERFAHREN UND VORRICHTUNG ZUM MESSEN EINES INTERESSIERENDEN PARAMETERS MIT BILDEBENENERFASSUNGSTECHNIKEN

Title (fr)  
PROCÉDÉ ET APPAREIL PERMETTANT DE MESURER UN PARAMÈTRE D'INTÉRÊT AU MOYEN DE TECHNIQUES DE DÉTECTION DE PLAN D'IMAGE

Publication  
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Application  
**EP 18156625 A 20180214**

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Abstract (en)  
A inspection apparatus, method, and system associated therewith are described herein. In a non-limiting embodiment, a inspection apparatus includes an optical system and an imaging system. The optical system may be configured to output an illumination beam incident on a target including one or more features, and the illumination beam being polarized with a first polarization when incident on the target. The imaging system may be configured to obtain intensity data representing at least a portion of the illumination beam scattered by the one or more features, where the portion of the illumination beam has a second polarization orthogonal to the first polarization; generate image data representing an image of each of the feature(s) based on the intensity data; and determine a measurement of a parameter of interest associated with the feature(s) based on an amount of the portion of the illumination beam having the second polarization.

IPC 8 full level  
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Citation (applicant)

- US 2006033921 A1 20060216 - DEN BOEF ARIE J [NL], et al
- US 2010201963 A1 20100812 - CRAMER HUGO AUGUSTINUS JOSEPH [NL], et al
- US 2006066855 A1 20060330 - BOEF ARIE J M [NL], et al
- US 2010328655 A1 20101230 - DEN BOEF ARIE JEFFREY [NL]
- US 2011069292 A1 20110324 - DEN BOEF ARIE JEFFREY [NL]
- US 2011027704 A1 20110203 - CRAMER HUGO AUGUSTINUS JOSEPH [NL], et al
- US 2011043791 A1 20110224 - SMILDE HENDRIK JAN HIDDE [NL], et al
- US 2011102753 A1 20110505 - VAN DE KERKHOF MARCUS ADRIANUS [NL], et al
- US 2012044470 A1 20120223 - SMILDE HENDRIK JAN HIDDE [NL], et al
- US 2012123581 A1 20120517 - SMILDE HENDRIK JAN HIDDE [NL], et al
- US 2012242970 A1 20120927 - SMILDE HENDRIK JAN HIDDE [NL], et al
- US 2013258310 A1 20131003 - SMILDE HENDRIK JAN HIDDE [NL], et al
- US 2013271740 A1 20131017 - QUINTANILHA RICHARD [NL]
- WO 2013178422 A1 20131205 - ASML NETHERLANDS BV [NL]

Citation (search report)

- [XI] US 2003206298 A1 20031106 - BISCHOFF JOERG [DE], et al
- [X] WO 2009156225 A1 20091230 - ASML NETHERLANDS BV [NL], et al
- [A] US 2004169861 A1 20040902 - MIEHER WALTER D [US], et al

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